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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,447	03/29/2004	Shih-Hsien Lin	JCLA10877	3358

7590 10/11/2006  
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EXAMINER

WALFORD, NATALIE K

ART UNIT PAPER NUMBER

2879

DATE MAILED: 10/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/812,447

Applicant(s)

LIN ET AL.

Examiner

Natalie K. Walford

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 1947 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: figure 8, item 304. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claims 1, 11, 14, 15, 26, 29, 30, and 37 objected to because of the following informalities:

Claim 1 recites the limitation "the inner walls" in the fifth line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 recites the limitation "the width" in the first line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 recites the limitation "the depth" in the second line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 14 recites the limitation "the resistance device" in the second line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 15 recites the limitation "the inner walls" in the seventh line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 26 recites the limitation "the width" in the first line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 26 recites the limitation "the depth" in the second line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 29 recites the limitation "the resistance device" in the second line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 30 recites the limitation "the inner walls" in the eighth line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 37 recites the limitation "the width" in the first line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 37 recites the limitation "the depth" in the second line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 5-14, 30-31 and 34-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Winsor (US 6,100,635).

Regarding claim 1, Winsor discloses a cold cathode fluorescent flat lamp in figures 2 and 3, comprising: a first plate (items 56, 58, 78, 80), having a plurality of grooves (items 68, 70); a second plate (item 66), disposed on the first plate, so that the grooves constitute a plurality of airtight chambers (item 65 and area inside of 68 and 70); a fluorescent substance (item 108), disposed on either part of or all of the inner walls of the airtight chambers; a discharge gas (column 3, lines 38-41), disposed inside the airtight chambers; and a plurality of electrodes (items 96 and 98), disposed on both sides of the airtight chambers, respectively.

Regarding claim 2, Winsor discloses the cold cathode fluorescent flat lamp of claim 1, wherein the first plate and the second plate are made of a material such as glass (column 3, lines 35-38).

Regarding claim 5, Winsor discloses the cold cathode fluorescent flat lamp of claim 1, wherein the electrodes are made of a metal electrode (column 4, lines 16-17).

Regarding claim 6, Winsor discloses the cold cathode fluorescent flat lamp of claim 5, wherein the metal electrode comprises nickel electrode, silver electrode, copper electrode, molybdenum electrode, or niobium electrode (column 4, lines 16-17).

Regarding claim 7, Winsor discloses the cold cathode fluorescent flat lamp of claim 1, wherein the grooves are extended in parallel to one edge of the first plate (FIGS. 2 and 3).

Regarding claim 8, Winsor discloses the cold cathode fluorescent flat lamp of claim 1, wherein the grooves are extended in a direction inclined with a certain angle from one edge of the first plate (FIGS. 2 and 3).

Regarding claim 9, Winsor discloses the cold cathode fluorescent flat lamp of claim 1, wherein the grooves comprise either rectangle grooves or arc grooves (FIG. 3, item 68 and 70).

Regarding claim 10, Winsor discloses the cold cathode fluorescent flat lamp of claim 1, further comprising at least one connection groove, wherein the connection groove is formed in between the grooves, so that the grooves are connected with each other (FIGS. 2 and 3, item 72).

Regarding claim 11, Winsor discloses the cold cathode fluorescent flat lamp of claim 10, wherein the width of the connection groove is 0.1 ~ 10 mm (FIG. 3, item  $d_g$  and column 5, lines 50-51), and the depth of the connection groove is 0.1 mm ~ 5 mm (FIG. 3, item  $d_d$  and column 5, lines 38-39).

Regarding claim 12, Winsor discloses the cold cathode fluorescent flat lamp of claim 1, wherein the bottom of the first plate is a reflective surface (FIG. 3, item 110).

Regarding claim 13, Winsor discloses the cold cathode fluorescent flat lamp of claim 1, wherein the bottom of the second plate is a diffusion surface (FIG. 3, items 112, 113, and 114).

Regarding claim 14, Winsor discloses the cold cathode fluorescent flat lamp of claim 1, further comprising an impedance device, wherein the resistance device is disposed on the electrodes, and the impedance device is a resistor, a capacitor, or an inductor (FIG. 2, item 106). The Examiner notes that the resistor (i.e. glass bead) is formed around the electrodes and is an insulative barrier (column 4, lines 39-50). The insulative barrier prevents current from flowing since it is made of an insulative material.

Regarding claim 30, Winsor discloses a cold cathode fluorescent flat lamp in figures 2 and 4, comprising: a wave-type structure, having a plurality of wave peaks (area at top of item 54) and a plurality of wave troughs (area at bottom of item 54); a first plate (item 54), disposed on the wave troughs, so that a plurality of first airtight chambers (item 65 and 87) are formed between the wave-type structure and the first plate; a second plate (item 66), disposed on the wave peaks, so that a plurality of second airtight chambers (item 65 and 89) are formed between the wave-type structure and the second plate; a fluorescent substance (item 108), disposed on either part of or all of the inner walls of the first airtight chambers and the second airtight chambers; a discharge gas (column 3, lines 38-41), disposed inside the first airtight chambers and the second airtight chambers; and a plurality of electrodes (items 96 and 98), disposed on both sides of the first airtight chambers and the second airtight chambers, respectively.

Regarding claim 31, Winsor discloses the cold cathode fluorescent flat lamp of claim 30, wherein the first plate and the second plate are made of a material such as glass (column 3, lines 35-38).

Regarding claim 34, Winsor discloses the cold cathode fluorescent flat lamp of claim 30, wherein the electrodes are made of a metal electrode (column 4, lines 16-17).

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Regarding claim 35, Winsor discloses the cold cathode fluorescent flat lamp of claim 34, wherein the metal electrode comprises nickel electrode, silver electrode, copper electrode, molybdenum electrode, or niobium electrode (column 4, lines 16-17).

Regarding claim 36, Winsor discloses the cold cathode fluorescent flat lamp of claim 30, further comprising at least one connection groove, wherein the connection groove is formed on the wave-type structure, so that the first airtight chambers and the second airtight chambers are connected with each other (FIGS. 2 and 4, item 72).

Regarding claim 37, Winsor discloses the cold cathode fluorescent flat lamp of claim 36, wherein the width of the connection groove is 0.1 mm ~ 10 mm (FIG. 3, item  $d_g$  and column 5, lines 50-51), and the depth of the connection groove is 0.1 mm ~ 5 mm (FIG. 3, item  $d_d$  and column 5, lines 38-39).

Regarding claim 38, Winsor discloses the cold cathode fluorescent flat lamp of claim 30, wherein the bottom of the first plate is a reflective surface (FIG. 4, item 115).

Regarding claim 39, Winsor discloses the cold cathode fluorescent flat lamp of claim 30, wherein the bottom of the second plate is a diffusion surface (FIG. 2, items 112, 113, and 114).

Regarding claim 40, Winsor discloses the cold cathode fluorescent flat lamp of claim 30, further comprising an impedance device, wherein the impedance device is disposed on the electrodes, and the impedance device is a resistor, a capacitor, or an inductor (FIG. 2, item 106). The Examiner notes that the resistor (i.e. glass bead) is formed around the electrodes and is an insulative barrier (column 4, lines 39-50). The insulative barrier prevents current from flowing since it is made of an insulative material.



***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-4 and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winsor (US 6,100,635) in view of Osawa et al. (US 5,187,415).

Regarding claim 3, Winsor discloses the cold cathode fluorescent flat lamp of claim 1, but does not expressly disclose that the discharge gas comprises an inert gas, as claimed by Applicant. Osawa is cited to show a cold cathode fluorescent lamp in figure 1 with an inert gas sealed within (column 2, lines 50-51). Osawa teaches that by using an inert gas, that higher luminance can be achieved (column 4, line 30 thru column 5, line 33).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Winsor's device to include the discharge gas comprising an inert gas as suggested by Osawa for achieving a higher luminance.

Regarding claim 4, the combined reference of Winsor and Osawa disclose the cold cathode fluorescent flat lamp of claim 3, wherein the inert gas comprises Xe, Ne, or Ar (column 2, lines 50-51).

Regarding claim 32, Winsor discloses the cold cathode fluorescent flat lamp of claim 30, but does not expressly disclose that the discharge gas comprises an inert gas, as claimed by Applicant. Osawa is cited to show a cold cathode fluorescent lamp in figure 1 with an inert gas

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sealed within (column 2, lines 50-51). Osawa teaches that by using an inert gas, that higher luminance can be achieved (column 4, line 30 thru column 5, line 33).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Winsor's device to include the discharge gas comprising an inert gas as suggested by Osawa for achieving a higher luminance.

Regarding claim 33, the combined reference of Winsor and Osawa disclose the cold cathode fluorescent flat lamp of claim 32, wherein the inert gas comprises Xe, Ne, or Ar (column 2, lines 50-51).

Claims 15-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krefft (US 2,555,749) in view of Winsor (US 6,100,635).

Regarding claim 15, Krefft discloses a cold cathode fluorescent flat lamp in figure 1, comprising: a first plate (item 2), having a plurality of first grooves (area surrounding bottom of item 10); a second plate (item 1), having a plurality of second grooves (area surrounding top of item 10), wherein the second plate is disposed on the first plate, and the second grooves are corresponded to the first grooves, respectively, so that the first grooves and the second grooves constitute a plurality of airtight chambers (see FIG. 1); a fluorescent substance (item 10), disposed on either part of or all of the inner walls of the airtight chambers; a discharge gas (column 4, lines 36-41), disposed inside the airtight chambers; and a plurality of electrodes (items 8 and 9), but does not expressly disclose that the electrodes are disposed on both sides of the airtight chambers, respectively, as claimed by Applicant. Winsor is cited to show a cold cathode fluorescent lamp in figures 2 and 3, which has electrodes (items 96 and 98) that are

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disposed on the sides of airtight chambers (item 65). Winsor teaches that the electrodes are formed on the side of the chambers to provide electrical energy to channels in the lamp and it extends the surface area for cold cathode emission of electrons into the chamber (column 4, lines 12-25).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Krefft's invention to include the electrodes disposed on both sides of the airtight chambers, respectively, as suggested by Winsor for providing electrical energy into channels of the lamp and extending the surface area for cold cathode emission of electrons into the airtight chamber.

Regarding claim 16, the combined reference of Krefft and Winsor disclose the cold cathode fluorescent flat lamp of claim 15, wherein the first plate and the second plate are made of a material such as glass (Winsor; column 3, lines 35-38).

Regarding claim 17, the combined reference of Krefft and Winsor disclose the cold cathode fluorescent flat lamp of claim 15, wherein the discharge gas comprises an inert gas (Krefft; column 4, lines 36-41).

Regarding claim 18, the combined reference of Krefft and Winsor disclose the cold cathode fluorescent flat lamp of claim 17, wherein the inert gas comprises Xe, Ne, or Ar (Krefft; column 4, lines 36-41).

Regarding claim 19, the combined reference of Krefft and Winsor disclose the cold cathode fluorescent flat lamp of claim 15, wherein the electrodes are made of a metal electrode (Winsor; column 4, lines 16-17).

Regarding claim 20, the combined reference of Krefft and Winsor disclose the cold cathode fluorescent flat lamp of claim 19, wherein the metal electrode comprises nickel electrode, silver electrode, copper electrode, molybdenum electrode, or niobium electrode (Winsor; column 4, lines 16-17).

Regarding claim 21, the combined reference of Krefft and Winsor disclose the cold cathode fluorescent flat lamp of claim 15, wherein the first grooves and the second grooves are extended in parallel to one edge of the first plate (Krefft; FIGS. 1 and 10 and Winsor; FIGS. 2 and 3).

Regarding claim 22, the combined reference of Krefft and Winsor disclose the cold cathode fluorescent flat lamp of claim 15, wherein the first grooves and the second grooves are extended in a direction inclined with a certain angle from one edge of the first plate (Krefft; FIGS. 1 and 10 and Winsor; FIGS. 2 and 3).

Regarding claim 23, the combined reference of Krefft and Winsor disclose the cold cathode fluorescent flat lamp of claim 15, further comprising at least one connection groove, wherein the connection groove is formed in between the first grooves, so that the first grooves are connected with each other (Winsor; FIGS. 2 and 3, item 72).

Regarding claim 24, the combined reference of Krefft and Winsor disclose the cold cathode fluorescent flat lamp of claim 15, wherein the first grooves and the second grooves comprise either rectangle grooves or arc grooves (Krefft; FIG. 1, area at top and bottom of item 10 and Winsor; FIG. 3, item 68 and 70).

Regarding claim 25, the combined reference of Krefft and Winsor disclose the cold cathode fluorescent flat lamp of claim 15, further comprising at least one connection groove,

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wherein the connection groove is formed in between the second grooves, so that the second grooves are connected with each other (Winsor; FIGS. 2 and 3, item 72).

Regarding claim 26, the combined reference of Krefft and Winsor disclose the cold cathode fluorescent flat lamp of claim 25, wherein the width of the connection groove is 0.1 mm ~ 10 mm (Winsor; FIG. 3, item  $d_g$  and column 5, lines 50-51), and the depth of the connection groove is 0.1 mm ~ 5 mm (FIG. 3, item  $d_d$  and column 5, lines 38-39).

Regarding claim 27, the combined reference of Krefft and Winsor disclose the cold cathode fluorescent flat lamp of claim 15, wherein the bottom of the first plate is a reflective surface (Winsor; FIG. 3, item 110).

Regarding claim 28, the combined reference of Krefft and Winsor disclose the cold cathode fluorescent flat lamp of claim 15, wherein the bottom of the second plate is a diffusion surface (FIG. 3, items 112, 113, and 114).

Regarding claim 29, the combined reference of Krefft and Winsor disclose the cold cathode fluorescent flat lamp of claim 15, further comprising an impedance device, wherein the resistance device is disposed on the electrodes, and the impedance device is a resistor, a capacitor, or an inductor (Winsor; FIG. 2, item 106). The Examiner notes that the resistor (i.e. glass bead) is formed around the electrodes and is an insulative barrier (column 4, lines 39-50). The insulative barrier prevents current from flowing since it is made of an insulative material.

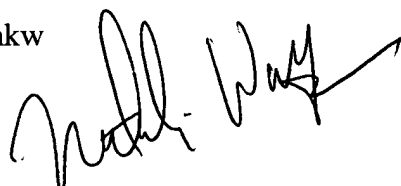
***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalie K. Walford whose telephone number is (571)-272-6012. The examiner can normally be reached on Monday-Friday, 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571)-272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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